.....

Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)

217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2008; month=5; day=1; hr=15; min=18; sec=40; ms=565; ]

### 

Reviewer Comments: <210> 40

<211> 374

<212> PRT

<213> Pichia pastoris

<220>

-2207

<221> MOD\_RES <222> (176)...(190)

<223> Variable amino acid

<220>

<221> MOD RES

<222> (202)...(213)

<223> Variable amino acid

<400> 40

Ser Tyr Thr Asp Ile Asp Phe Ser Ser Tyr Met Gln Gln Ile Phe Lys 1 5 10 15

1 5 10 15 Ile Arq Gln Gly Glu Leu Asp Tyr Ser Asn Ile Phe Gly Asp Thr Gly

30

20 2

Pro Leu Val Tyr Pro Ala Gly His Val His Ala Tyr Ser Val Leu Ser 35 40 45

Trp Tyr Ser Asp Gly Gly Glu Asp Val Ser Phe Val Gln Gln Ala Phe 50 55 60

Gly Trp Leu Tyr Leu Gly Cys Leu Leu Leu Ser Ile Ser Ser Tyr Phe 65 70 75 80

Phe Ser Gly Leu Gly Lys Ile Pro Pro Val Tyr Phe Val Leu Leu Val 85 90 95

Ala Ser Lys Arg Leu His Ser Ile Phe Val Leu Arg Leu Phe Asn Asp

			100					105					110		
Cvs	Leu	Thr	Thr	Phe	Leu	Met	Leu	Ala	Thr	Ile	Ile	Ile	Leu	Gln	Gln
		115					120					125			
Ala	Ser	Ser	Trp	Arg	Lys	Asp	Gly	Thr	Thr	Ile	Pro	Leu	Ser	Val	Pro
	130					135					140				
Asp	Ala	Ala	Asp	Thr	Tyr	Ser	Leu	Ala	Ile	Ser	Val	Lys	Met	Asn	Xaa
145					150					155					160
xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Cys	Asp
				165					170					175	
Glu	Asn	Leu	Ile	Lys	Ala	Leu	Ala	Pro	Xaa	Xaa	Xaa	хаа	хаа	Xaa	Xaa
			180					185					190		
Xaa	Xaa	Xaa	Xaa	хаа	Tyr	Ser	Phe	Ile	Leu	Pro	Leu	His	Tyr	Asp	Asp
		195					200					205			
Gln	Ala	Asn	Glu	Ile	Arg	Ser	Ala	Tyr	Phe	Arg	Gln	Ala	Phe	Asp	Phe
	210					215					220				
Ser	Arg	Gln	Phe	Leu	_	Lys	Trp	Thr	Val		Trp	Arg	Phe	Leu	Ser
225					230					235					240
Gln	Glu	Thr	Phe		Asn	Val	His	Phe		Gln	Leu	Leu	Phe		Leu
				245					250					255	
His	Ile	Ile		Leu	Val	Leu	Phe		Leu	Lys	Phe	Leu		Pro	Lys
			260					265					270		
Asn	Ile	-	Lys	Pro	Leu	Gly	-	Phe	Val	Leu	Asp		Phe	Lys	Phe
		275					280					285			
Trp	Lys	Pro	Thr	Leu	Ser		Thr	Asn	Ile	Ile		Asp	Pro	Glu	Arg
	290					295				_	300				
	Pro	Asp	Phe	Val	-	Thr	Val	Met	Ala		Thr	Asn	Leu	Ile	_
305	_			_	310	_		_		315	_	_	_	_	320
val	Leu	Phe	ALa	-	Ser	Leu	His	Tyr		Phe	Leu	Ser	Trp	-	Ala
ni	Ser		D	325			<b>-</b>	·	330				ni-	335	.1-
Pne	ser	Leu	340	TAT	Leu	ren	ıyı	345	wig	Ary	ren	ASII	350	116	WIG
Con	Ile	T1 +		~	77.0	210	Di a		T	C	~	T au		Dhe	Dwe
ser	ire	355	vai	TYL	wra	nra	360	GIU	ıyı	cys	irb	365	vai	riie	FIU
n1a	Thr		G1n	Sar	Sar		300					503			
nia	370	5±u	OLII	Det	Der										

The above <222> responses describing Xaa locations are incorrect: Xaa is located at positions 160-174 and 186-197, not at locations 202-213.

Application No:

10500240

Version No:

3.0

Input Set:

Output Set:

Started: 2008-04-15 16:02:05.595

Finished: 2008-04-15 16:02:13.772 Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 177 ms

Artificial or Unknown found in <213> in SEO ID (1)

Total Warnings: 33 Total Errors: 53

No. of SegIDs Defined: 106 Actual SeqID Count: 106

Error code	Fror Description

213

10

w

213 Artificial or Unknown found in <213> in SEQ ID (2) 213 Artificial or Unknown found in <213> in SEO ID (3)

W 213 Artificial or Hoknown found in <213> in SEO ID (4)

213 Artificial or Unknown found in <213> in SEO ID (5) w 213 Artificial or Unknown found in <213> in SEO ID (6)

W. 213 Artificial or Unknown found in <213> in SEO ID (7)

213 Artificial or Unknown found in <213> in SEO ID (8) 213 Artificial or Unknown found in <213> in SEQ ID (9)

10 213 Artificial or Unknown found in <213> in SEO ID (10) 213 Artificial or Unknown found in <213> in SEQ ID (11)

213 Artificial or Unknown found in <213> in SEO ID (12)

213 Artificial or Hoknown found in <213> in SEO ID (13) 213 Artificial or Unknown found in <213> in SEO ID (14)

213 Artificial or Unknown found in <213> in SEO ID (15)

213 Artificial or Unknown found in <213> in SEQ ID (16) Artificial or Unknown found in <213> in SEO ID (17)

213 Artificial or Unknown found in <213> in SEQ ID (18)

Artificial or Unknown found in <213> in SEO ID (19) 213 Artificial or Unknown found in <213> in SEQ ID (20)

### Input Set:

### Output Set:

Started: 2008-04-15 16:02:05.595 Finished: 2008-04-15 16:02:13.772 Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 177 ms

This error has occurred more than 20 times, will not be displayed

Total Warnings: 33

Total Errors: 53 No. of SeqIDs Defined: 106 Actual SeqID Count: 106

#### Error code Error Description

		inis error has occured more than 20 times, will not be displayed
Ε	257	Invalid sequence data feature in <221> in SEQ ID (24)
Ε	257	Invalid sequence data feature in <221> in SBQ ID (24)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (26)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (36)
Е	257	Invalid sequence data feature in <221> in SEQ ID (36)
Е	257	Invalid sequence data feature in <221> in SEQ ID (38)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (38)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (40)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (40)
Ε	341	'Xaa' position not defined SEQID (40) POS (160)
Ε	341	'Xaa' position not defined SEQID (40) POS (161)
Ε	341	'Xaa' position not defined SEQID (40) POS (162)
Ε	341	'Xaa' position not defined SEQID (40) POS (163)
Ε	341	'Xaa' position not defined SEQID (40) POS (164)
E	341	'Xaa' position not defined SEQID (40) POS (165)
Ε	341	'Xaa' position not defined SEQID (40) POS (166)
Ε	341	'Xaa' position not defined SEQID (40) POS (167)
E	341	'Xaa' position not defined SEQID (40) POS (168)
Е	341	'Xaa' position not defined SEQID (40) POS (169)
Е	341	'Xaa' position not defined SEQID (40) POS (170)
E	341	'Xaa' position not defined SBQID (40) POS (171)

# Input Set:

## Output Set:

		Started: 2008-04-15 16:02:05.595
		Finished: 2008-04-15 16:02:13.772
		Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 177 ms
		Total Warnings: 33
		Total Errors: 53
		f SeqIDs Defined: 106
	Ac	ctual SeqID Count: 106
En	ror code	Error Description
E	341	'Xaa' position not defined SEQID (40) POS (172)
E	341	'Xaa' position not defined SEQID (40) POS (173)
Ε	341	'Xaa' position not defined SEQID (40) POS (174)
Ε	341	'Xaa' position not defined SEQID (40) POS (191)
Ε	341	'Xaa' position not defined SEQID (40) POS (192)
Е	341	'Xaa' position not defined SEQID (40) POS (193)
Ε	341	'Xaa' position not defined SEQID (40) POS (194)
Е	341	'Xaa' position not defined SEQID (40) POS (195) This error has occured more than 20 times, will not be displayed
Ε	257	Invalid sequence data feature in <221> in SBQ ID (42)
Ε	257	Invalid sequence data feature in <221> in SBQ ID (42)
W	402	Undefined organism found in <213> in SEQ ID (44)
W	402	Undefined organism found in <213> in SBQ ID (45)
W	402	Undefined organism found in <213> in SEQ ID (46)
W	402	Undefined organism found in <213> in SEQ ID (48)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (54)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (56)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (58)
Ε	257	Invalid sequence data feature in <221> in SBQ ID (60)
Е	257	Invalid sequence data feature in <221> in SBQ ID (62)
Ε	257	Invalid sequence data feature in <221> in SEQ ID (68)
E	257	Invalid sequence data feature in <221> in SEQ ID (70)

E 257 Invalid sequence data feature in <221> in SEQ ID (72)

### Input Set:

### Output Set:

Started: 2008-04-15 16:02:05.595

Finished: 2008-04-15 16:02:13.772

Elapsed: 0 hr(s) 0 min(s) 8 sec(s) 177 ms

Total Warnings: 33

Total Errors: 53
No. of SeqIDs Defined: 106
Actual SeqID Count: 106

W 402

Err	or code	Error Description
E	257	Invalid sequence data feature in <221> in SEQ ID (78) This error has occured more than 20 times, will not be displayed
W	402	Undefined organism found in <213> in SEQ ID (86)
W	402	Undefined organism found in <213> in SEQ ID (87)
W	402	Undefined organism found in <213> in SEQ ID (88)
w	402	Undefined organism found in <213> in SEQ ID (90)
w	402	Undefined organism found in <213> in SEQ ID (92)

Undefined organism found in <213> in SEO ID (94)

#### SEQUENCE LISTING

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<110> WILDT, Stefan
     MIELE, Robert G.
     NETT, Juergen H.
      DAVIDSON, Robert C.
<120> METHODS TO ENGINEER NAMEGALIAN-TYPE
  CARBOHYDRATE STRUCTURES
<130> GF0022P
<140> 10500240
<141> 2005-03-23
<150> PCT/US02/41510
<151> 2002-12-24
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<220>
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                                                                  22
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<400> 8

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<220>
<223> Primer
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                                                                  24
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/220×
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2220×
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  20 25
Val Arg Tyr Val Ile Phe Asp Cys Arg Ala Asp Leu Ile Val Met Pro
   35 40
Leu Leu Ile Leu Phe Glu Ser Met Leu Cys Lys Ile Ile Ile Lys Lys
         55
Val Ala Tyr Thr Glu Ile Asp Tyr Lys Ala Tyr Met Glu Gln Ile Glu
65 70 75
Met Ile Gln Leu Asp Gly Met Leu Asp Tyr Ser Gln Val Ser Gly Gly
         85 90 95
Thr Gly Pro Leu Val Tyr Pro Ala Gly His Val Leu Ile Tyr Lys Met
       100 105
Met Tyr Trp Leu Thr Glu Gly Met Asp His Val Glu Arg Gly Gln Val
     115 120
Phe Phe Arg Tyr Leu Tyr Leu Leu Thr Leu Ala Leu Glm Met Ala Cys
       135
                     140
Tyr Tyr Leu Leu His Leu Pro Pro Trp Cys Val Val Leu Ala Cys Leu
145 150 155 160
Ser Lys Arg Leu His Ser Ile Tyr Val Leu Arg Leu Phe Asn Asp Cys
          165 170 175
Phe Thr Thr Leu Phe Met Val Val Thr Val Leu Gly Ala Ile Val Ala
      180 185 190
Ser Arg Cys His Gln Arg Pro Lys Leu Lys Lys Ser Leu Ala Leu Val
     195 200 205
Ile Ser Ala Thr Tvr Ser Met Ala Val Ser Ile Lvs Met Asn Ala Leu
       215 220
Leu Tvr Phe Pro Ala Met Met Ile Ser Leu Phe Ile Leu Asn Asn Ala
225 230 235 240
Asn Val Ile Leu Thr Leu Leu Asn Leu Val Ala Met Ile Ala Trn Gln
          245 250 255
Val Ala Val Ala Val Pro Phe Leu Arg Ser Phe Pro Gln Gln Tyr Leu
      260 265 270
His Cys Ala Phe Asn Phe Gly Arg Lys Phe Met Tyr Gln Trp Ser Ile
     275 280 285
Asn Trp Gln Met Met Asp Glu Glu Ala Phe Asn Asp Lys Arg Phe Xaa
       295
                      300
305 310 315 320
Thr Arg Tyr Pro Arg Ile Lew Pro Asp Lew Trp Ser Ser Lew Cys His
          325 330 335
Pro Leu Arg Lys Asn Ala Val Leu Asn Ala Asn Pro Ala Lys Thr Ile
     340 345 350
Pro Phe Val Leu Ile Ala Ser Asm Phe Ile Gly Val Leu Phe Ser Arg
```

360

365

355

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Ser Leu His Tyr Gln Phe Leu Ser Trp Tyr His Trp Thr Leu Pro Ile
        375
Leu Ile Phe Trp Ser Gly Met Pro Phe Phe Val Gly Pro Ile Trp Tyr
       390 395
Val Leu His Glu Trp Cvs Trp Asn Ser Tvr Pro Pro Asn Ser Gln Xaa
        405 410 415
420 425 430
Xaa Xaa Xaa Xaa Sor Gly Sor Val Ala Lou Ala Lys Sor His Lou Arg
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Thr Thr Ser Ser Met Glu Lys Lys Leu Asn
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1 5 10 15
Gln Phe Val Arg Pro Pro Leu Asp Leu Trp Gln Asp Leu Lys Asp Gly
   20 25
Val Arg Tyr Val Ile Phe Asp Cys Arg Ala Asn Leu Ile Val Met Pro
Leu Leu Ile Leu Phe Glu Ser Met Leu Cvs Lvs Ile Ile Ile Lvs Lvs
 50 55
Val Ala Tyr Thr Glu Ile Asp Tyr Lys Ala Tyr Met Glu Gln Ile Glu
     70 75
Met Ile Gln Leu Asp Gly Met Leu Asp Tyr Ser Gln Val Ser Gly Gly
         85 90 95
Thr Gly Pro Leu Val Tyr Pro Ala Gly Eis Val Leu Ile Tyr Lys Met
      100 105 110
Met Tyr Trp Leu Thr Glu Gly Met Asp Eis Val Glu Arg Gly Gln Val
     115 120 125
Phe Phe Arg Tvr Leu Tvr Leu Leu Thr Leu Ala Leu Gln Met Ala Cvs
  130 135 140
Tyr Tyr Leu Leu His Leu Pro Pro Trp Cys Val Val Leu Ala Cys Leu
            150 155
Ser Lys Arg Leu His Ser Ile Tyr Val Leu Arg Leu Phe Asn Asp Cys
          165 170 175
Phe Thr Thr Leu Phe Met Val Val Thr Val Leu Gly Ala Ile Val Ala
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Ser Arg Cys His Gln Arg Pro Lys Leu Lys Lys Ser Leu Ala Leu Val
     195 200 205
Ile Ser Ala Thr Tyr Ser Met Ala Val Ser Ile Lys Met Asn Ala Leu
  210 215 220
Lou Tyr Phe Pro Ala Met Met Ile Ser Lou Phe Ile Lou Asn Asp Ala
225 230 235 240
Asn Val Ile Leu Thr Leu Leu Asp Leu Val Ala Met Ile Ala Trp Gin
         245 250 255
Val Ala Val Ala Val Pro Phe Leu Arg Ser Phe Pro Gln Gln Tyr Leu
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His Cys Ala Phe Asn Phe Gly Arg Lys Phe Met Tyr Gln Trp Ser Ile
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Asn Trp Gln Met Met Asp Glu Glu Ala Phe Asn Asp Lys Arg Phe His
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Leu Ala Leu Leu Ile Ser His Leu Ile Ala Leu Thr Thr Leu Phe Val
305 310 315 320
Thr Arg Tyr Pro Arg Ile Leu Pro Asp Leu Trp Ser Ser Leu Cys His
          325 330 335
Pro Leu Arg Lys Asn Ala Val Leu Asn Ala Asn Pro Ala Lys Thr Ile
       340 345 350
Pro Phe Val Lou Ile Ala Ser Asm Phe Ile Gly Val Leu Phe Ser Arg
    355 360 365
Ser Leu His Tyr Gln Phe Leu Ser Trp Tyr His Trp Thr Leu Pro Ile
  370 375 380
Leu Ile Phe Trp Ser Gly Met Pro Phe Phe Val Gly Pro Ile Trp Tyr
385 390 395 400
Val Leu His Glu Trp Cys Trp Asn Ser Tyr Pro Pro Asn Ser Gln Ala
         405 410 415
Ser Thr Leu Leu Leu Ala Leu Asn Thr Val Leu Leu Leu Leu Leu Ala
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Ala Tvr Met Glu Gln Ile Glu Met Ile Gln Leu Asm Glv Met Leu Asm
  50 55 60
Tyr Ser Glm Val Ser Gly Gly Thr Gly Pro Leu Val Tyr Pro Ala Gly
65 70 75 80
His Val Leu Ile Tyr Lys Met Met Tyr Trp Leu Thr Glu Gly Met Asp
         85 90 95
His Val Glu Ard Gly Gln Val Phe Phe Ard Tyr Leu Tyr Leu Leu Thr
        100 105 110
Leu Ala Leu Glm Met Ala Cys Tyr Tyr Leu Leu His Leu Pro Pro Trp
     115 120 125
Cys Val Val Leu Ala Cys Leu Ser Lys Arg Leu His Ser Ile Tyr Val
  130 135 140
Leu Arg Leu Phe Asm Asp Cys Phe Thr Thr Leu Phe Met Val Val Thr
145 150 155 160
Val Leu Gly Ala Ile Val Ala Ser Arg Cys His Gln Arg Pro Lys Leu
           165 170 175
Lys Lys His Gln Thr Cys Lys Val Pro Pro Phe Val Phe Phe Met
```

```
185
Cys Cys Ala Ser Tyr Arg Val His Ser Ile Phe Val Leu Arg Leu Phe
    195 200 205
Asn Asp Pro Val Ala Met Val Leu Leu Phe Leu Ser Ile Asn Leu Leu
 210 215 220
Leu Ala Glo Aru Trp Glv Trp Glv Ser Leu Ala Leu Val Ile Ser Ala
225 230 235 240
Thr Tyr Ser Met Ala Val Ser Ile Lys Met Asn Ala Leu Leu Tyr Phe
         245 250 255
Pro Ala Met Met Ile Ser Leu Phe Ile Leu Asn Asp Ala Asn Val Ile
      260 265 270
Leu Thr Leu Leu Asp Leu Val Ala Met Ile Ala Trp Gln Val Ala Val
    275 280 285
Ala Val Pro Phe Leu Arg Ser Phe Pro Gin Gin Tyr Leu His Cys Ala
 290 295 300
Phe Asn Phe Gly Arg Lys Phe Met Tyr Gln Trp Ser Ile Asn Trp Gln
           310 315 320
Met Met Asp Glu Glu Ala Phe Asn Asp Lys Arg Phe Xao Xao Xao Xao
               330 335
         325
340 345 350
Pro Arg Ile Leu Pro Asp Leu Trp Ser Ser Leu Cys His Pro Leu Arg
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Lys Asn Ala Val Leu Asn Ala Asn Pro Ala Lys Thr Ile Pro Phe Val
 370 375 380
Leu Ile Ala Ser Asm Phe Ile Gly Val Leu Phe Ser Arm Ser Leu His
      390 395 400
Tyr Gln Phe Leu Ser Trp Tyr Eis Trp Thr Leu Pro Ile Leu Ile Phe
         405 410
Trp Ser Gly Met Pro Phe Phe Val Gly Pro Ile Trp Tyr Val Leu His
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Glu Trp Cys Trp Asn Ser Tyr Pro Pro Asn Ser
    435 440
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      20 25
Ile His Arq Val Ala Tyr Thr Glu Ile Asp Trp Lys Ala Tyr Met Ala
  35 40 45
Glu Val Glu Gly Val Gly Thr Tyr Asp Tyr Thr Gln Leu Gln Gly Asp
        55
Thr Gly Pro Lou Val Tyr Pro Ala Gly Phe Val Tyr Ile Phe Met Gly
            70 75
Leu Tyr Tyr Ala Thr Ser Arg Gly Thr Asp Ile Arg Met Ala Gln Asn
        85 90 95
Ile Phe Ala Val Leu Tyr Leu Ala Thr Leu Leu Leu Val Phe Leu Ile
      100 105 110
Tyr His Gln Thr Cys Lys Val Pro Pro Phe Val Phe Phe Met Cys
    115
                  120
                               125
```

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130 135
App Pro Val Als Met Val Leu Leu Phe Leu Ser Ile Am Leu Leu Leu Leu
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Als Gin Arg Trp Gly Trp Gly Cys Cys Phe Phe Ser Leu Als Val Der
170 177
Val Lys Met Am Val Leu Leu Phe Als Pro Gly Leu Leu Phe Leu Leu
180 150
Leu Th Gin Phe Gly Phe Arg Gly Als Leu Pro Lys Leu Gly 116
Leu Th Gin Phe Gly Phe Arg Gly Als Leu Pro Lys Leu Gly 116
Leu Th Gin Phe Gly Phe Arg Gly Als Leu Pro Lys Leu Gly 116 Cys
185

Ala Gly Leu Gln Val Val Leu Gly Leu Pro Phe Leu Leu Glu Am Pro 210 215 220

210 215 220 Ser Gly Tyr Leu Ser Arg Ser Phe Asp Leu Gly Arg Gln Phe Leu Phe 225 230 235 240 Ris Trp Thr Val Asm